

CLAIMS

1. A gas humidifier comprising:

a heat-exchanger core of a plate-fin type in which a plurality of longitudinal tube plates are laminated in a thickness direction with predetermined intervals so that a plurality of spaces, aligned side by side in the horizontal direction, are formed, with heating-use high-temperature fluid being allowed to flow alternately through those spaces, so as to direct a gas to be humidified to another space from above to below;

an injection tube that is inserted virtually horizontally along tube plates on two sides in an upper portion of each space so as to spray a liquid that serves as a steam source into the space in which the gas flows from above to below; and

a header pipe that is connected to the injection tube at a place apart from the heat-exchanger core so as to supply the liquid to the injection tube.

2. The gas humidifier according to claim 1, wherein one portion of the gas to be humidified that has been introduced to the upper portion of the space is allowed to flow outside the heat-exchanger core and to contact the header pipe placed outside thereof.

3. The gas humidifier according to claim 1, which is used for humidifying fuel in a molten carbonate fuel cell (MCFC) .